

REMARKS:

Applicant greatly appreciates the copy of form PTO-1449 initial by Examiner Nizal S. Chandrakumar, which was received with the Office action. On the other hand, part 12 of the Office Action Summary does not acknowledge applicant's claim to foreign priority under 35 U.S.C. §119 from Japanese Patent Application No. 2004-36803 filed on February 13, 2004. The Declaration for Patent Application and Power of Attorney and Application Data Sheet submitted together with his application claimed priority from the aforesaid Japanese application, and the Official filing receipt listed applicant's claim to priority based on the aforesaid Japanese application. Normally, the International Bureau forewords a copy of the priority document to the United States Patent and Trademark Office (USPTO). It is respectfully requested that the application file be checked for receipt of a copy of Japanese Patent Application No. 2004-36803 filed on February 13, 2004 and that the next communication from the USPTO) acknowledge receipt of this Japanese patent application and applicant's claim to priority thereto under 35 U.S.C. §119.

The foregoing Listing of Claims includes amendments to claims 1 to 4. Independent claims 1 and 3 now define that for the chemical formulas (1) and (2) set forth therein, X is a straight-chain C<sub>1</sub>-C<sub>10</sub> alkyl group, an -OCOR<sup>6</sup> group, or an -OR<sup>6</sup> group; R<sup>6</sup> is a hydrogen atom, a straight- or branched-chain C<sub>1</sub>-C<sub>6</sub> alkyl group or a substituted or unsubstituted C<sub>5</sub>-C<sub>10</sub> cycloalkyl group; and Z is -O- or -NR<sup>6</sup>- wherein R<sup>6</sup> is defined elsewhere in the claim. These definitions for X, R<sup>6</sup>, and Z are within the ranges set forth in original claims 1 and 2.

The foregoing amendments were made to clarify what was already implied in applicant's claims and these amendments are not narrowing amendments and were not made for reasons substantially related to patentability presented.

Claims 1-12 are pending in the application. The Official action withdrew claims 5-12 from consideration as being directed to a non-elected invention. Applicant respectfully requests reconsideration and allowance of claims 1-12 for the following reasons.

The Official action set forth a lack of unity of invention requirement under 37 C.F.R. §1.499 to the following groups of invention:

- I. Claims 1-4 drawn to heteropolycyclic compounds, and
- II. Claims 5-12 drawn to colorant comprising compounds of group I.

The Official action stated that the inventions listed as groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack of the same or corresponding special technical features for the following reasons: the common technical feature in all groups is a 4-aminated, 4-arylated, naphthaquinone structure. The Official action continued that this element cannot be a special technical feature under PCT Rule 13.2 because this element is known in the art, citing Yoshida *et al.*, Journal of Chemical Society, Perkin Transactions 1, 1990, pages 1891-1895. The Official action further stated that because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction was not required, because the inventions require a different field of search (see M.P.E.P. §808.02); restriction for examination purposes as indicated is proper.

In a telephone interview on December 6, 2007, applicant elected the invention of group I, including claims 1-4 with oral traverse. Claims 5-12 were withdrawn from consideration by the examiner as being directed to a non-elected invention.

Applicant hereby now traverses in writing the aforesaid lack of unity of invention requirement. In particular, applicant respectfully submits that alleged characterization of the special technical feature and that the so characterized special technical feature cannot be a special technical feature under PCT Rule 13.2 because this element is known in the art PCT Rule 13.2 is fundamentally flawed and thus improper. For example, no nonprovisional prior art rejection of applicant's claims was set forth in the outstanding Office action. Accordingly, no evidence was proffered in the Official action and there is no support in the record that the alleged special technical feature of applicant's claims as defined in the Official action is, in fact, known (or at least not novel) in the art.

The article of Yoshida *et al.* in the Journal of Chemical Society (Perkin Transactions 1, 1990, pages 1891-1895) was cited to support the position that the alleged special technical feature of applicant's claims was known in the art. This article was cited by applicant in an information disclosure statement filed together with this application. This article also was cited in the international search report under category "A" -- meaning that the document defines a general state-of-the-art which is not considered to be of particular relevance. Furthermore, applicant respectfully notes that the written opinion of the international searching authority in the parent PCT application stated that claims corresponding to those set forth in the present application possessed novelty, inventive step, and industrial applicability.

Still further, applicant respectfully submits that claims 5-12 define compositions only containing the compounds of claims 1-4. Accordingly, it would appear that the novelty or unobviousness of the invention set forth in claims 5-12 is related to that of the compounds of claims 1-4.

For at least the foregoing reasons, applicant respectfully requests that the examiner reconsider and withdraw the lack of unity of invention requirement of claims 1-12 and examine claims 1-12 the same.

Claims 1-12 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This rejection appears on page 4 of the Official action, where the Official action stated that the definition of Z as a "divalent group" is indefinite. While applicant does not agree with this rejection, the foregoing amendments further defined that the substituent Z is -O- or -NR<sup>6</sup>-, where R<sup>6</sup> is a hydrogen atom, a straight- or branched-chain C<sub>1</sub>-C<sub>6</sub> alkyl group or a substituted or unsubstituted C<sub>5</sub>-C<sub>10</sub> cycloalkyl group. Accordingly, applicant respectfully submits that the claims of this application define the substituent Z with precision and in a manner that complies with the second paragraph of 35 U.S.C. §112. Therefore, applicant respectfully requests that the examiner reconsider and withdraw this rejection.

Claims 1-12 were rejected under 35 U.S.C. §112, first paragraph, because the specification, while being enabled for a limited number of compounds of formulas (1) and (2), does not reasonably provide enablement for the plurality of possible structures claimed. This rejection appears on pages 4-6 of the Official action. The Official action noted the Wands factors

(M.P.E.P. §2164.01(a)). In support of this rejection, the Official action stated that the specification provides limited disclosure with regards to the ability (utility) of the claimed compounds as components of pigments and dyes. Applicant respectfully notes that the utility of the claimed compounds is not one of the Wands factors. Therefore, applicant does not understand the significance of this statement relative to the first paragraph of 35 U.S.C. §112. Applicant respectfully submits that any person skilled in this art would understand from applicant's specification disclosure that all the compounds encompassed by formulas (1) and (2) in the present claims can be used as pigments or dyes.

The Official action questioned support in the specification for the claimed compounds where  $R^4$  or  $R^5$  is other than H. While Applicant does not agree with this position, it is noted that in the foregoing Listing of Claims  $R^4$  or  $R^5$  is H, which compounds find support in the present specification disclosure.

The Official action also questioned support in the specification for the claimed compounds where Z is other than O and N. While applicant does not agree with this position, it is noted that in the foregoing Listing of Claims substituent Z is -O- or -NR<sup>6</sup>- wherein R<sup>6</sup> is a hydrogen atom, a straight- or branched-chain C<sub>1</sub>-C<sub>6</sub> alkyl group or a substituted or unsubstituted C<sub>5</sub>-C<sub>10</sub> cycloalkyl group. These compounds find support in the present specification disclosure.

The Official action further questioned support in the specification for the claimed compounds where X is other than O (i.e. X = OH, acyl or ether linkage). While applicant does not agree with this position, it is noted that in the foregoing Listing of Claims X is a straight-chain C<sub>1</sub>-C<sub>10</sub> alkyl group, an -OCOR<sup>6</sup> group, or an -OR<sup>6</sup> group. Examples 8 and 9 of the present

application show the preparation of compounds within the scope of present claims 1 and 2, where X is a straight-chain alkyl group, namely, n-butyl. For at least these reasons, applicant respectfully submits that the compounds defined in present claims 1 and 2 find support in the present specification disclosure within the meaning of the first paragraph of 35 U.S.C. §112.

In this connection, it is respectfully noted all that is necessary to comply with the first paragraph of 35 U.S.C. §112 is that one skilled in the art be able to practice the claimed invention, given the level of knowledge and skill in the art. Further the scope of enablement must only bear a "reasonable correlation" to the scope of the claims. See, e.g., *In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970). A disclosure of a large number of operable embodiments and the identification of a single inoperative embodiment did not render a claim broader than the enabled scope because undue experimentation was not involved in determining those embodiments that were operable. *In re Angstadt*, 537 F.2d 498, 502-503, 190 USPQ 214, 218 (CCPA 1976).

For at least the foregoing reasons, applicant respectfully submits that the inventions defined in claims 1-4 are enabled by the present specification disclosure within the meaning of 35 U.S.C. §112, first paragraph. Therefore, applicant respectfully requests that the examiner reconsider and withdraw this rejection.

Claims 1-12 were rejected provisionally on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 1, 2, and 9-21 of copending application No.



10/545,319 (U.S. Patent Publication No. 2006/0235060 A1).<sup>1</sup> This rejection appears on pages 3 and 4 of the Official action.

Applicant respectfully submits that the heterocyclic compound represented by formulas (1) and (2) in present claims 1-12 are completely different in structure from the compounds of claims 1, 2, and 9-21 of copending application No. 10/545,319. Therefore, the presently claimed invention cannot be anticipated by or obvious from claims 1, 2, and 9-21 of copending application No. 10/545,319.

Applicant respectfully submits that the omission of claims 3-8 of the copending application in this rejection is an admission by the Office, that formulas (III) through (VIII) in claims 3-8 of the copending application represent structures that are patently distinct from those required in present claims 1-12. Furthermore, applicant respectfully submits that those person skilled in the art understand that the compounds of formulas (III) through (VIII) in claims 3-8 of the copending application includes structures, including a heterocyclic group containing nitrogen that is substituted by an aryl group, that are significantly different from those of the present claims.

Considering the compounds of formulas (I) and (II) of claims 1, 2, and 9-21 of copending application No. 10/545,319, it is respectfully noted that these compounds contain an oxygen atom double bonded at position 1 of the naphthalene structure in formulas (I) and (II). In contrast thereto, the presently claimed compounds have substituents R<sup>1</sup> and X bonded at position 1 of the

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<sup>1</sup> The copending application number was incorrectly set forth in the Official action, and the correct number as set forth herein was confirmed in a telephone interview with the Examiner Nizal S. Chandrakumar on January 14, 2008.

naphthalene structure. In the presently claimed invention, R<sup>1</sup> is a straight- or branched-chain C<sub>1</sub>-C<sub>10</sub> alkyl group, a substituted or unsubstituted C<sub>5</sub>-C<sub>10</sub> cycloalkyl group or a substituted or unsubstituted phenyl group and X is a straight-chain C<sub>1</sub>-C<sub>10</sub> alkyl group, an -OCOR<sup>6</sup> group, or -OR<sup>6</sup> group. The presently claimed bonds at position 1 of the naphthalene structure include *both* R<sup>1</sup> (a straight- or branched-chain C<sub>1</sub>-C<sub>10</sub> alkyl group, a substituted or unsubstituted C<sub>5</sub>-C<sub>10</sub> cycloalkyl group or a substituted or unsubstituted phenyl group) and X (a straight-chain C<sub>1</sub>-C<sub>10</sub> alkyl group, an -OCOR<sup>6</sup> group, or -OR<sup>6</sup> group) of the presently claimed invention are significantly different in structure, function, and properties from the double bonded oxygen at this position as proposed by copending application No. 10/545,319. Therefore, the structure proposed by copending application No. 10/545,319 cannot anticipate or render obvious the structure required in the present claims.

For at least the foregoing reasons, applicant respectfully submits that the inventions defined in claims 1-12 are patently distinguishable from claims 1, 2, and 9-21 of copending application No. 10/545,319 based on novelty or unobviousness or within 35 U.S.C. §102 or 35 U.S.C. §103. Therefore, applicant respectfully requests that the examiner reconsider and withdraw this rejection.

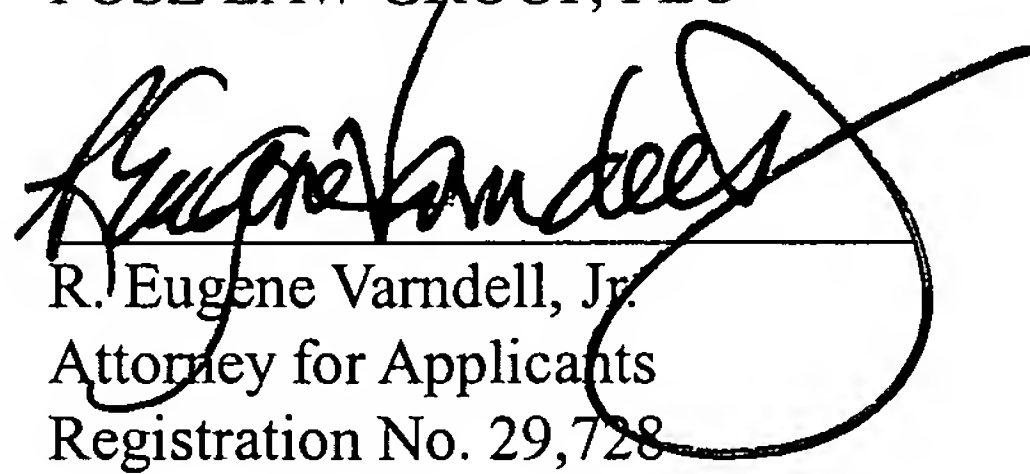
In view of the foregoing amendments and remarks, favorable consideration and allowance of claims 1-12 are respectfully requested. While it is believed that the present response places the application in condition for allowance, should the examiner have any comments or questions,



it is respectfully requested that the undersigned be telephoned at the below listed number to resolve any outstanding issues.

In the event this paper is not timely filed, applicant hereby petitions for an appropriate extension of time. The fee therefor, as well as any other fees which may become due, may be charged to our deposit account No. 50-1147.

Respectfully submitted,  
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